THEY WENT EXPLORING

BY
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ILLUSTRATED BY C. H. DEWITT

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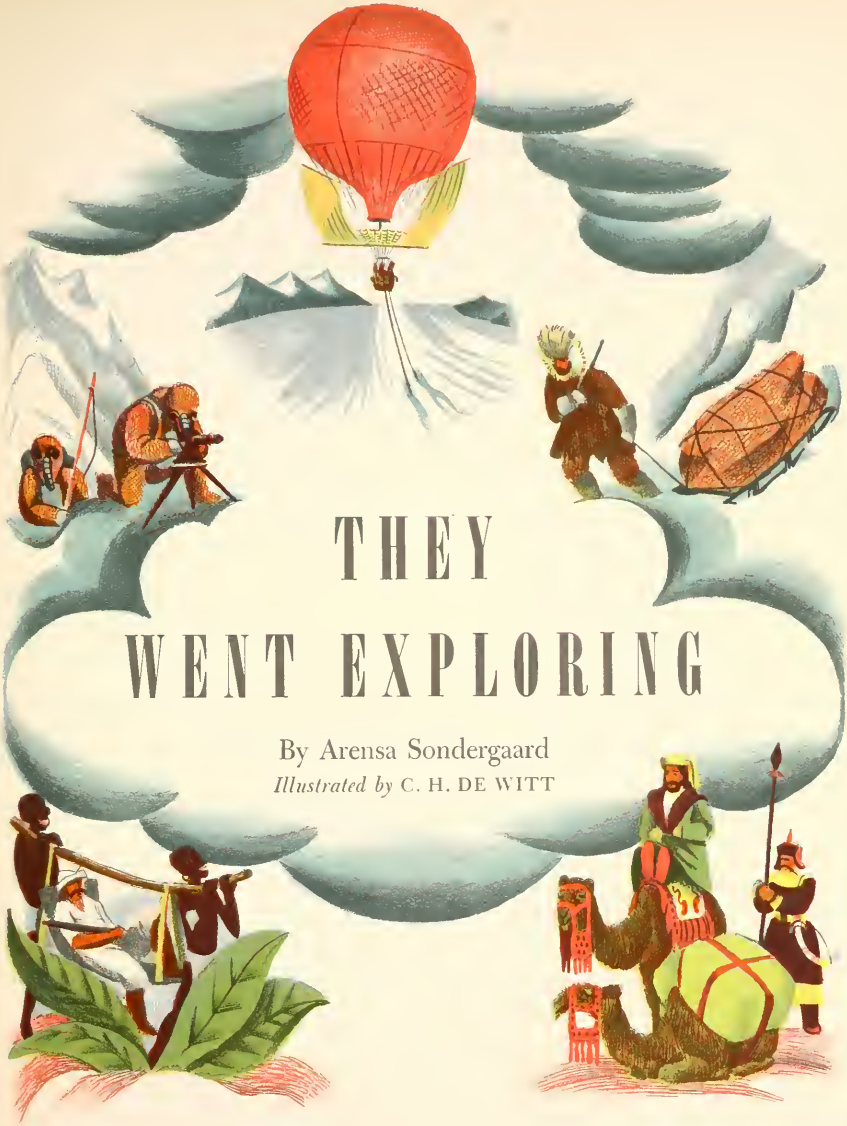

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By Arensa Sondergaard
Illustrated by C. H. DE WITT

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Man Learns to Travel

IN THE EARLIEST AGES, thousands of years ago, when man had only his own two feet for getting about, he moved silently through the forests, cautiously marking his trails as he hunted for food.

Sometimes he ran along the river banks, listening for the "plop" of a fish, his eyes searching the overhanging bushes for berries. Sometimes he left the cover of the forests and stood at the land's edge looking out to sea, unable even to imagine what life there might be in the ocean depths or on far shores.

His was a small world. Fearfully he moved in it, his club lifted at the slightest sound, for at any moment some beast or enemy might waylay him.

The river and forest lured him farther from home. Following waterways as he hunted, man saw logs, leaves, and soil being carried downstream. Often he watched animals propelling themselves with noiseless grace through the water. As an experiment, he flattened himself on top of a log and found that he, too, could be carried downstream. Gaining courage, he fastened several logs together and poled himself about, finding that with little effort he could go upstream as well as down.

In time, with better tools for scraping, man hollowed out tree trunks and devised crude paddles and oars. Now whole families could be moved about, and bands of hunters or warriors could travel together.

In time, boats became larger, lighter, and easier to handle. The harnessing of the wind by means of a sail made boats faster than ever before, and men grew more daring.

Now the more familiar waterways of the rivers were left behind for the

sea. But, wary of the storms of the open sea, the boats still hugged the coasts, nosing in and out of the inlets.

If squalls threatened or enemy craft appeared, landings were made, and the boats were pulled up on the shore for safety.

Always there were a few men who were more venturesome, and who traveled farther than their comrades, returning to tell stories of what they had heard and seen.

Gradually people came to understand that they were part of a larger world—how large no one knew—and that they could visit other villages and trade with other tribes.

They could even sail to distant places about which they knew very little. They could go exploring.

Cautiously the early sailors hugged the rugged coasts.

By Land and Sea

THE MINOANS from the island of Crete were among the first travelers of ancient times. Despite fearsome stories of sea monsters and whirlpools, these small Cretan sailors, supple and bronzed, plied their slender boats around the islands and along the shores of the Mediterranean.

The boldest seafaring men of ancient times put out from the Near East cities of Sidon and Tyre.

In these busy Phoenician ports, hundreds of slaves worked day and night to load the holds of the many merchant ships waiting to sail to lands far away. Loads of glassware and shining brass utensils passed from straining arms and bent backs to the holds of the ships; orders were shouted to bring on the bales of cotton and wool stuffs—fine weaving done in the households of the Phoenician women.

Slaves grunted with relief as huge beams of timber, from the green slopes of the Lebanon Mountains, were eased on board. Merchants watched anxiously as their shipments of richly embroidered fabrics and precious jewels disappeared from sight. Slaves from the slave market were marched on board and taken below, some not to see the sunlight for many ports.

The rich cargoes having been successfully stored and provisions for the long sea voyage brought on board, orders were given to sail.

Amid shouting, gesticulations, and last-minute warnings from the shore, husky arms lifted the oars in precise rhythm, the great colored sails billowed out in the early morning breeze, and soon the sea was dotted with the craft of traders and adventurers off to make their fortunes.

Some of these ships found their way to Egypt and Greece and Italy; others sailed past the islands of Cyprus, Crete, and Sicily, and, skirting the coast of Spain, entered the stormy seas of the Atlantic in search of new lands where brisk trade might be found.

Some of the ships sailed in the service of the King of Egypt. They ventured down the Red Sea toward southern lands and came out on the broad expanse of the Indian Ocean.

It is said that on one of these trips, the Phoenicians followed the coast of Africa for three whole years, landing at times to plant and harvest their wheat. Always keeping Africa on their right, they rounded the Cape of

Good Hope, came northward all the way to the Pillars of Hercules, now called the Strait of Gibraltar, and found themselves once again in the familiar seas of the Mediterranean.

If this story is true, the Phoenician sailors were the first to sail around the continent of Africa; and this was six hundred years before Christ was born.

Having seen new lands, many Phoenicians took their families with them and built villages and cities on the coast of the Mediterranean where good harbors were found. Ships came and went; the new cities grew and became powerful.

Carthage, on the northern coast of Africa, became the greatest trading center of them all. Thousands of slaves worked in the fields and in the shops. From the port, boats set out on long voyages, and many were the tales brought back of strange lands they visited, lying far away across the Mediterranean Sea or down the African coast.

So it happened that nearly 2500 years ago, Hanno, a seafaring man and explorer at heart, sailed from Carthage as leader of a whole fleet of ships. Thousands of men and women, eager to try their luck in new lands, were on board. Soon the boats passed the Pillars of Hercules and made their way along the west coast of Africa.

Whenever the land seemed fertile and the coastline favorable for boats to put in, the passengers consulted Hanno. On his advice a group often went ashore and unloaded their goods, and they began to set up their new homes far from the city of Carthage.

Then Hanno sailed with what remained of the fleet as far south as Sierra Leone. He marked well all that he saw—the warlike black natives, the crocodiles basking in the rivers, the elephants wading in the swamps and roam-

ing the plains. He listened to the frightening sounds of drumbeats echoing through the valleys at night. Then he returned to Carthage, where people listened wide-eyed to his story.

In the small country in southern Europe known as Greece lived men hungry for knowledge of strange places. Some, courageous enough to brave the stormy Atlantic, headed northward and landed on the shores of England.

The discovery of new land and strange people was not left to peaceful fishermen and tradesmen alone. Often kings and princes led their armies and navies on conquests of lands little known at that time.

In Macedonia, north of Greece, a young king, Alexander the Great, called his soldiers together.

"Fellow soldiers," he said, "let us cross the sea to Asia and conquer that part of the world for ourselves. Let us take the lands of Persia and build new cities and so spread the glorious Greek civilization wherever we go."

Cheers arose from the thousands of horsemen and foot soldiers. Fired with the enthusiasm of their young king, and hoping for new adventures of their own, the soldiers prepared to move.

Alexander led his armies through Syria, and took the cities of Sidon and Tyre.

With his men he pushed into the rich lands of Egypt; and at a place where the mighty Nile River flows into the sea, Alexander founded a city which he called Alexandria, to perpetuate his name. This is still one of the great cities of the world.

Persia, one of the powerful kingdoms of that time, and the cities of Babylon, Sousa, and Persepolis fell to the conqueror; but Alexander was never satisfied.

He led his faithful soldiers across plains and rivers, through burning deserts and into mountainous regions. They came to the lands now known as Turkestan and Afghanistan and fought one savage people after another. Finally, years after they had left their homeland, the worn soldiers wearily crossed the river Indus on the border of India.

"We can go no farther," they protested to their young king. "Thirst, hunger, long marches and heavy fighting have exhausted us. Let us now turn back to our homes and families."

Then only did Alexander see that he would have to give up his conquest of India, and he commanded his soldiers to turn back.

At this time Rome, a new nation, was growing up on the shores of the Mediterranean, spreading its power through the ancient world to a degree never before thought possible. In those days, ships were not built to resist battering ocean waves, and men did not know how to plot a course over open sea; so the Romans steered their boats along the coast from one landmark to another.

They explored the coast of northern Africa. They seized the beautiful city of Carthage, conquered Egypt, Palestine, and Syria, and swept through the land of Mesopotamia which lies between the Euphrates and Tigris rivers.

Roman ships and armies found their way to Spain, to Gaul, which was the ancient name for France, to England and other parts of northern Europe. Wherever the Roman soldiers and traders came, new buildings were erected, roads were laid, and Roman ways of living spread among the natives.

But far to the north, hundreds of years later, a race of men grew up for whom the open sea held no terrors. These were the Vikings, or Norsemen, from the shores of Denmark and Norway. Up and down the coasts of Europe their boats appeared.

They had been south before to trade their amber and furs for linen and wool and fine metals. Bent now on conquest and plunder, these burly fellows with raucous voices and ruthless ways plagued the people of the coast villages, killing and plundering as they went.

Some of the Norsemen took land and settled on it with their friends and families; but others pushed on.

The greatest voyagers of the Norsemen went westward across the stormy North Atlantic. Gradually settlements were made on Iceland and Greenland.

Still the long-ships nosed ever farther westward until one day Biarni, a Viking leader driven out of his course by a storm, sighted the bleak coast of what must have been Labrador. He did not land, but continued a little farther southward before returning to tell of his discovery.

When Leif Ericson, a tall, raw-boned young Icelander, heard about the new land, he hailed Biarni. "Give me the use of your long-ship that I may see these lands for myself," he said. "Let me show that my carles and I are still good Vikings and not a race of stay-at-homes!"

The hardy Vikings stepped ashore on Vinland's sunny slopes.

It was all arranged. Old Eric the Red, Leif's father, was to have gone, too. But on the day of sailing he suffered an accident on the way to the boat. Regretfully he had to resign himself to the less adventuresome life of the old and the injured.

So Leif and his men sailed off without him. They lived on dried fish and meat, and steered their course by the sun and the stars. Soon they saw the lands of which Biarni had told them.

First Labrador, the land of flat stones, appeared; then came wooded coasts and sandy beaches; and on the following days green valley slopes were seen, where grapes grew plentifully. They landed and gathered grapes from which wine could be made, so they called the land Wineland, or Vinland.

All this happened almost a thousand years ago, about four hundred years before the famous trip of Columbus. It was probably the first time that white men had landed in America; and though other Norsemen followed Leif to these shores, most of them soon went back again to Iceland and Greenland. After some years all the white men in America had sailed away or had been killed or captured by the Indians.

The feet of Roman legions beat new roads through Europe.

To the East for Silks and Spices

SOON AFTER the Norsemen's visit to America, a time of great restlessness and activity began in many of the countries of Europe. Kings and princes with their armed men went on expeditions, called "Crusades," to conquer for the Christians the Holy Land of Palestine, which at that time was ruled by the Moslems, followers of Mohammed. Soldiers and civilians alike became much aware of other lands, and curious about their people.

Two Italian traders of this time, Maffeo and Nicolo Polo, spent fourteen years wandering through Asia, buying and selling. They succeeded at last in gaining an audience with the Khan in China, who asked them to return.

By the time the Polos reached home, Marco, the son of Nicolo, was seventeen years old. He listened in excitement to the stories of the travelers. He could never hear enough of the strange lands visited. So, when plans were made to return to the court of the Khan, Nicolo said, "How would you like, my son, to travel with your uncle and me to the strange lands of Asia? There will be great adventures for a strapping young fellow like you, and dangers as well; but, good traders and jewelers that we are, we may all earn fame and riches. Since we are also appointed to carry letters from the Pope to the mighty ruler of the Mongol Empire, much of interest may befall us."

So it happened that in 1271 Marco and the two elder Polos sailed from the busy port of Venice to the city of Acre in the Holy Land. Arriving in Asia they started their overland journey, which was to lead through more cities and countries than most men had ever heard of.

The travelers came to the land of Persia. As they went through city after city, they did much profitable trading. Slowly they crossed sandy wastes, rugged mountains, and plains swept by bitter winds. Many delays beset them. Even small distances, when covered by caravan or by foot, were reckoned in months and years; days and weeks seemed hardly worth mentioning.

Passing through the city of Lob, the weary travelers began the crossing of the great desert of Asia. The Gobi Desert was a dreaded stretch of sand. In crossing it, Marco saw neither bird nor beast; there were few places where men could rest or find water. In spite of tales of evil spirits that made weird music to lead tired travelers astray, the Venetians toiled on over des-

The Polos' weary caravan drew near the capital of Kublai Khan.

ert and mountain, reaching the borders of China after a journey of more than three and a half years.

When Kublai Khan heard that travelers were approaching, he sent messengers to greet them, and the Polos were received with great honors at the Khan's palace at Chandu.

Observing Marco, the Khan demanded to know, "By what right does this young man come into my presence?"

Nicolo, prostrate before the Emperor, replied, "He comes as my son and to offer you his service." This pleased the Khan very much. He took a liking to Marco, who traveled with the court to many parts of China, visiting fabulous places where no European had been before.

The Polos won positions of great trust at the court of the Khan, and earned great riches. They stayed in China for twenty years. But at last they wished to get back to Venice. The Princess Cocachin was to be married in Persia, and needed experienced travelers like the Polos to escort her there. They were given a huge fleet, and set out at last. In time they successfully made the long journey back, by way of the China Sea and the Spice Islands.

This remarkable journey of the Polos made the people of Europe more aware of the huge continent of Asia to the East; now other travelers, setting out a few at a time, ventured upon the perilous and long roads in hopes of seeing the famed cities of Persia, India, and China.

But the roads to the Far East remained unimproved; dangers lurked on the way; travelers were often attacked. The terrible hunger and exhaustion encountered in the western deserts made travel a grim undertaking. Furthermore, Europe was in a turmoil of constant wars, which made overland travel and exploration increasingly hard and unsafe.

So Henry the Navigator, Prince of Portugal, manned his ships with fine sailors and sent them down the coast of Africa. They rounded one cape after another, and discovered the Madeira and Cape Verde Islands.

The idea grew that the southern end of Africa might be reached, and, in 1488, Bartholomew Diaz gallantly steered his ship past the Cape of Good Hope and into Mossel Bay just beyond.

Back in port, the men said, "If we can sail south around Africa, we should be able to reach India by water." Within the next years, this idea became more and more a certainty in their minds, and many wished for the command of such an expedition.

The man finally chosen to find the sea route to India was Vasco Da Gama, a dauntless young navigator, born in the small Portuguese town of Sines.

He set forth from Portugal in July, 1497, with four ships and one hundred and seventy men who were not afraid to face the dangers of unexplored seas and strange lands.

Down along the western coast of Africa the wind pushed them, past the Canary Islands, and on to the Cape Verdes, which rose out of the ocean green and beautiful. Here they took on board new supplies of fruit and meat, and filled their water casks at the clear mountain streams. Refreshed, they re-embarked and set their course for the Cape of Good Hope at the southernmost point of Africa. From captain to cabin boy ran the excitement of new adventure.

In Santa Helena Bay, where the fleet came to anchor, they met the friendly natives of South Africa. The Hottentots, as these brown-skinned people were called, were great hunters, moving from place to place where the grazing was good, and traveling long distances to kill the antelope, the rhinoceros, and the elephants which roamed the plains.

Out on the open ocean again, the explorers rounded the Cape of Good Hope and sailed on up the other side of the African continent.

They passed the mouth of the great Zambesi River and skirted the harbors of other towns bearing strange and colorful names. Often they were attacked by the natives and were thankful to escape death and captivity; but sometimes when they dropped anchor they were received with friendly greetings, upon which they urged the chief of the tribe to come on board with his gaily bedecked warriors.

Near the town of Malindi, where a river runs out into the ocean, they saw the ships of the daring seagoing Arabs come and go—ships manned by many slaves and loaded to the gunwales with silks and spices and other things to be sold to the thousands of people living on the shores of the Indian Ocean.

One day, while Vasco Da Gama was waiting for a favorable wind, the monsoon started to blow from the southwest, as it always does from May to September. Swept over the ocean, the Portuguese reached the coastal town of Calicut, the most important port on the western coast of India.

So, in 1498, the sea route to India was discovered.

West to a New Land

On August 3, 1492, a new adventure began when three Spanish ships sailed west from the port of Palos. Their names—*Nina*, *Pinta*, and *Santa Maria*—have become well known to us all. From the mast of the *Santa Maria* waved the flag of the leader, Christopher Columbus.

Columbus, born in Genoa, had the support of the Spanish king in his search for the westward route to India and Japan, and for the islands which, he had heard, lay far out in the Atlantic Ocean.

From Spain the three ships set their course for the Canary Islands, where fresh supplies were taken on for the long voyage ahead.

Then out they sailed into the unknown.

The weather was fine as the three small ships plowed steadily westward. For weeks all went well. But after many days and nights on the ocean with no sight of land, some of the sailors became impatient.

"We will not sail farther out on this great sea," they said. "It is surely too

dangerous for a few men to brave such a large, unknown ocean. Suppose we come to the end of the world, what then? Suppose we meet a sea monster? It would smash our ships with a flick of its tail and swallow us all, to the last man!"

But Columbus calmed his frightened men. "Be patient," he urged. "There will be land ahead. What would your great king and queen think if your courage gave out? And your wives and sweethearts? Would they not laugh if you were to return without having discovered even one small island?"

So, keeping their ships to their course, they sailed on.

One day they met birds flying westward. "A good omen," they thought. "There must be land shortly." Then logs and branches were seen floating in the water. Now the sailors knew that soon they would stretch their legs on shore.

On October 12, 1492, the shout of "Land!" went from ship to ship, and as they drew nearer they saw to their delight the low sandy shores of a small island.

That very day they landed and took possession of the island in the name of King Ferdinand and his queen, Isabella. They called it San Salvador.

Since Columbus now thought that he had reached a group of islands near India, he called them the West Indies, and the natives Indians.

Upon his return, Columbus appeared before the King and Queen of Spain to give an account of all he had seen. News of his discovery traveled throughout Europe, causing great excitement. Soon ships set out from many countries to explore the new world across the sea.

The names of many men who first set out toward the land of promise are now long forgotten, but some will always be remembered, among them that of Amerigo Vespucci, for whom the Americas are named.

In the year 1513, Vasco Nunez De Balboa, a Spaniard, set out on a march across Central America to find a distant ocean about which he had heard. He made his way through jungle and mountainous country and came at last to a summit from which he beheld a great body of water.

Filled with pride and excitement, Balboa ran down to the shore. Though he was clad in full armor, he dashed into the surf and took possession of the ocean in the name of his king. He called it the Great South Sea, and it is now known as the Pacific Ocean.

The shores of a small sandy island delighted their sea-weary eyes.

Ready to fight for gold and fame, men from Spain and other parts of Europe kept coming to the shores of the Americas. They brought with them as many horses and soldiers as their ships would hold.

Hernando Cortez landed near Vera Cruz and conquered Mexico City, the capital of the great Aztec Empire.

De Soto pushed north from Florida into what is now the United States. He discovered and followed the Mississippi River for many miles, and fought the Indians on the plains and in the forests. When he died of fever, his men buried him in the Mississippi.

The rough Pizarro and his brothers sailed from Panama to conquer the rich lands of Peru for the crown of Spain; and Francisco De Orellano, whose mind was filled with stories of El Dorado, the land of the gilded man, crossed the snow-clad Andes Mountains in his search. He was the first white man to follow the Amazon River from its source down to the ocean.

Balboa claimed an ocean for the mighty king of Spain.

Around the World

At about the same time, a young Portuguese nobleman, Ferdinand Magellan, went before the Emperor, Charles V, with a plan for sailing around South America to reach India and the Spice Islands by way of the great South Sea.

This was indeed a bold plan. After some hesitation, King Charles gave Magellan permission to leave with five ships and many men.

They sailed in September, 1519, from the Spanish port of Saint Lucar. Running along the coast of Africa, past the Cape Verde Islands, and entering the troubled waters of the Atlantic, they had a stormy voyage. Gales tore away their sails, and the ships tossed wildly as the waves dashed over them.

Finally South America was sighted, and, with calmer weather and clearing sky, the weatherbeaten fleet ran into the lovely bay where the city of Rio De Janeiro was later built. Soon the ships again put out to sea.

Searching for a way to sail around the continent, they found a narrow strait of water cutting through the land. We now call this the Strait of Magellan. It took over a month to travel some three hundred miles through the

Magellan's ships fought their way through the treacherous straits.

strait. When at last they reached the broad expanse of ocean on the other side of the continent, Magellan wept with joy. The weather was so fine, the sea so calm that they called this ocean the *Pacific*, meaning "peaceful."

Now began a crossing that was cruelly hard. Supplies ran low, and hunger and disease drove the men to eat almost anything; some in their desperation even ate sawdust and rats. Their scant water supply, too, became tainted.

During this voyage across the Pacific, which took more than three months to complete, Magellan and his men sighted only a few desolate islands.

When at last the Spaniards reached islands where natives came to the shore, these proved unfriendly and warlike; the Spaniards named the islands the Ladrones, or "Robbers' Isles."

Once more the ships stood out to sea. A wreck and a mutiny had reduced their number from five to three. In March, 1521, the little fleet reached Cebu in the Philippine Islands. Here the Europeans met friendly natives.

After a well-deserved rest, they were on their way again, now visiting island after island and town after town. Trading was good, and the weather so fine that all would have been well had Magellan not been persuaded to raid the island of Mactan.

The Mactani fought fiercely to defend their island, hurling rocks, earth, bamboo lances, and themselves upon the invaders, and shooting poisoned arrows from their blowguns. One of the arrows struck Magellan in the leg, where he was unprotected by armor. Soon the Mactani were upon him, and he motioned to his remaining soldiers to escape. So Magellan died.

Sebastian Del Cano now took command. With two ships and the crew left to him, he reached the Moluccas, or Spice Islands.

Before leaving the Moluccas, a cargo of cloves was taken on board the *Victoria*, the only seaworthy ship left of the little fleet. It set its course across the Indian Ocean. The African coast was reached, the Cape of Good Hope rounded, and the *Victoria* headed north toward Europe and home.

By this time nearly three years had gone by since Magellan had sailed from Spain. Fighting, fever, and disease had taken a big toll of the crew. The small band of thirty-one survivors were hailed as heroes in the Spanish city of Seville, and heroes they were indeed. They had found a new sea route to the islands where cloves and pepper and cinnamon were bought; they had seen new lands and met strange people; and, most important of all, they were *the first to sail completely around the world.*

The Northwest Passage

THOUGH A ROUTE to the Pacific had now been found far to the south, explorers continued to cross the Atlantic in search of a shorter way in the north.

John Cabot sailed from England to the shores of Labrador, Newfoundland, and Nova Scotia. His ships followed the coast of America and reached what is now Maine, Massachusetts, and Connecticut.

On his return to England Cabot reported that the ocean was rich in fish. In the following years, fishing boats came to the Grand Banks near Newfoundland and brought heavy shiploads of codfish back to Europe.

The Spaniards would have scoffed at comparing fish to their rich plunder of gold and jewels. Yet in the years to come, the fishing banks were to prove their worth in gold. They brought more in revenue to northern Europe than all the gold amassed by Spain through her daring explorations in the south.

In 1534, Jacques Cartier left the little French town of Saint Malo. He also came to the American coast of Labrador and Newfoundland. On a second voyage to these shores, while looking for a waterway through the land, he entered the Gulf of St. Lawrence, sailed past the island of Anti-

costi, and then finally reached the mouth of the giant St. Lawrence River.

Sailing up this great river, which flowed along between wooded shores, the sailors felt they were entering a new world. The Indians were friendly, and offered their furs and fox and beaver in trade for the knives, hatchets, and trinkets brought by the strangers.

After passing the Island of Orleans, the ships anchored near an Indian village called Stadacona; it was here that the city of Quebec grew up.

Their big ships could not sail farther up the St. Lawrence, and the explorers took to their longboats and rowed up the winding river through a wonderful country. Tall and beautiful trees on the riverbanks and rich, colorful bird life delighted the French sailors.

At a friendly Indian village of fifty houses, they climbed the near-by Mt. Royal, from whose summit they could see the land stretching beneath them for many miles.

Even after a winter of intense cold, during which many of the Frenchmen fell ill, Cartier's expedition was reluctant to leave this fertile country with its friendly natives. But, having taken possession of it in the name of the King of France, he at last had to go back to report. The Frenchmen sailed away, determined to return later.

Other men from other nations searched for a northern route to the Spice Islands and to China and India.

Henry Hudson, commanding the Dutch ship *Half Moon*, ran into storms near the American coast in 1609 and nearly lost his ship before he safely reached the mouth of the broad river which now bears his name.

Following this river, the *Half Moon* glided past Staten Island and Manhattan Island, past the clifflike Palisades of New Jersey, past green hills and immense forests, and came to anchor near the place where the city of Albany later was built.

The shallowness of the river prevented the ship from sailing farther upstream, and the men of the *Half Moon*, like so many others, failed in their search for a passage through the continent. But their discovery of the fine land on the riverbanks led to the arrival of many Dutch people who settled near the Hudson River.

One man, Peter Minuit, bought Manhattan Island from the natives, paying them in knives, beads, and other trinkets, worth about twenty-four dollars.

On this island was founded the town of New Amsterdam, which later became the city of New York.

The next year, Hudson sailed again, this time in the service of his native England. He passed the Faroe Islands, lying shrouded in the fog and mist of the North Atlantic.

He skirted the coast of Iceland and saw the steep snow-clad mountains of Greenland. Finally, having reached the coast of America, Hudson and his men sailed through a channel or strait many miles wide, into the large inland sea which was later given the name of Hudson Bay.

The sailors went through bitter days. Ice floes swirled by and threatened to crush the ship. Huge icebergs appeared; the fog and cold seemed unbearable. When provisions ran short and the sailors suffered from hunger and illness as well, many lost courage and wanted to turn back.

At last mutiny broke out among the men, and Hudson, his son John, and a few of his loyal followers were forced to leave the ship. Set adrift in an open boat, without supplies of any kind, they disappeared into the fog and were never heard of again.

Fog and cold and hunger drove Hudson's men to mutiny.

Indians along the St. Lawrence were friendly to the French.

Drake of England Rides the Seas

THE YEAR 1577 saw the beginning of one of the greatest of all adventures on the high seas. Francis Drake, a courageous young navigator and soldier sailed as admiral of a small English fleet to capture the Spanish ships which carried in their holds the gold and rich treasures of the Americas across the Atlantic Ocean.

His was a plan for piracy on a grand scale. Leaving England with five ships and nearly two hundred men, he followed the African coast. Near the Cape Verde Islands, the look-out reported "Spanish ships sighted to starboard, Sir."

"All hands on deck. Stand ready for action!" shouted the admiral. "Hoist the mainsail. Swing 'er around. We'll give them a run!"

Completely overwhelmed, the unlucky Spaniards were soon taken and deprived of their arms; their ships were stripped of gold and fresh provisions.

"Tell your king, Drake of England rides the seas!" shouted the men, and set their course for South America.

The crossing of the Atlantic was by turns turbulent and calm. The men kept constant watch for sails on the horizon but none were seen. Without mishap, Drake and his men reached the coast of South America.

But the passage through the Strait of Magellan was another story! Powerful tides drove the ships near dangerous rocks. Storms lashed at the sails

and rigging, and the ships were blown about and separated from each other.

Blown far south by the furious gales, Drake made the important discovery that the land south of the strait was not part of a southern continent, Terra Australis, as some had believed, but just a group of islands. He looked in vain for the other ships, then headed north with his own vessel, *The Golden Hind*.

One day when the weather had cleared and the ship was nearing the coast of Chile, men at the railing saw a small fishing boat manned by a lonely Indian. The fisherman was taken on board. The Englishmen, ready for action, pressed him for news. Through their signs he understood them to say, "We want gold. Much gold. Any Spaniards about?" So he told of a heavily laden Spanish ship riding at anchor in the harbor of Valparaiso.

The Golden Hind made ready for battle. Guns and cutlasses were brought on deck, kegs of powder and bullets were rolled out and opened. The ship headed toward the coast.

The battle was short, for the Spanish ship was taken completely by surprise. Gold, silver, and fresh provisions were found in abundance on the prize.

Though they were armed to the teeth, and kept watch night and day, the Spaniards now felt the full force of the terrible Drake, pirate of the high seas, who captured and plundered their ships as they plied along the coast of Peru and Chile.

Heavily laden with spoil, Drake sailed still farther north and came to "a faire and good bay," where he took possession of the land in the name of his queen, Elizabeth.

Some say this was the Bay of San Francisco.

The voyage across the Pacific was a pleasant one. The ship's stores were filled from the captured Spanish ships, and stolen Spanish charts made navigation easier.

The ship at last reached the Moluccas, where the Englishmen were well received in the city of Ternate.

Sailing again toward England, with a cargo of cloves added to that of gold and silver, the ship ran aground on an undersea reef near the island of Celebes.

Facing this new danger, the men were furious, and frightened as well. "Now we may lose our lives as well as our riches," they stormed.

An attempt was made to lighten the ship by throwing the cloves overboard. Suddenly the wind shifted and caught the sails; lurching and scraping over the rocks, *The Golden Hind* slipped into deep water. A great shout went up from its decks as the ship gathered speed and resumed its course.

In June 1580, the ship passed the Cape of Good Hope, and a few months later it glided into the harbor of Plymouth. Thus ended the voyage of *The Golden Hind,* nearly three years after Drake and his men had set out on their adventure.

As if to show the Spaniards how highly she thought of the man who had so disrupted their trade, Queen Elizabeth knighted Drake, with much ceremony, on the deck of his own ship.

Gold-laden ships of the Spaniards felt the full force of Francis Drake and his dashing English pirates who rode the Spanish Main.

Terra Australis

During the years that followed, many ships were sent to explore the Pacific Ocean and the countries and islands around it. Many went in search of a great continent, Terra Australis, which people for years had thought to be somewhere to the south.

Some of the old mapmakers had even placed this continent on their maps, though they did not know whether it actually existed.

In their search for Terra Australis, Dutch navigators made exciting discoveries and were the first white men to visit Australia, New Zealand, and Tasmania.

To this part of the world also came James Cook, an Englishman and one of the greatest explorers of his time.

Cook had gone to sea as a very young man. He had learned to take the hardship of the sea in the Royal Navy, to endure the long watches on board, and to obey orders uncomplainingly.

His ship, the *Endeavour,* left England in the summer of 1768 on one of the first scientific expeditions to set out from any country. Until then, men had ventured into the unknown for land, gold, or spices or in search of adventure. But sailing on the *Endeavour* with the captain and crew were men learned in the sciences of astronomy and botany. Observations of the stars and the planets were to be made on the way, rare plants were to be gathered and examined, and land was to be charted.

At Madeira a fresh stock of meat, water, and wine was taken on board, and in November, after crossing the Atlantic, Cook reached Rio de Janeiro in Brazil, rounded Cape Horn, and entered the Pacific.

In April 1769, after many days had passed with no sight of land, the wooded mountains of Tahiti rose above the horizon. Here, and on other of the Society Islands, the explorers met friendly natives who impressed the newcomers with their beauty, their pleasant ways of living, and their kindness toward visitors.

Moving on to New Zealand, the scientists spent six months charting the coasts and exploring the bays and natural harbors.

Then Cook sailed on to Australia, where the natives at first resented the coming of the Englishmen and threatened them with active hostility. But gifts of beads and brightly colored ribbons soon did away with any further attempts to disturb the visitors.

From the shores of the harbor in which they stayed, many rare plants and beautiful flowers were gathered by the botanists; and the bay was therefore named Botany Bay.

The voyage along the Australian coast took the ship to the Great Barrier Reef, which stretches under the water for hundreds of miles. The violence with which the long, thundering, white-capped breakers pound over the reefs serves as a warning to all sailors.

Nevertheless, the *Endeavour* ran aground; only with great difficulty did Cook and his men save their ship and bring it back to harbor, where some time was spent on repairs.

As the men worked on the ship, they saw strange animals hopping along with great speed on their powerful hind legs. These were Australian Kangaroos, whose young are carried about by the mothers in a pouch or pocket.

Once again seaworthy, the *Endeavour* made for Batavia on the island of Java, and then began its long voyage back to England by way of Cape Town in South Africa.

Captain Cook set a new record for health among his seaman. Until this time, sailors who went on long voyages had always suffered greatly from an illness called scurvy. This Captain Cook prevented by giving his men wholesome food, with plenty of vegetables, and oranges and lemons whenever they could be obtained.

In this way, Cook bettered the life of all sailors, for other captains came to realize more fully the importance of good health for their crews.

On his three voyages to the Pacific, Captain Cook had proved to the satisfaction of mapmakers that the great southern continent, Terra Australis,

which they had already placed on their maps, believing its discovery to be only a question of time, did not exist.

He had also searched the western coast of North America as far north as Alaska, proving to his satisfaction that a northern passage from the Pacific through the American continent to Hudson Bay and the Atlantic Ocean was not to be found.

On his last voyage, he reached the Sandwich Islands, or the Hawaiian Islands, as they are now called. These had first been seen by Spanish seamen more than two hundred years before.

Here, a boat was stolen from the ship. When the Captain went ashore to complain to the native chief, fighting had already begun between the natives and some of the English sailors.

Retreating toward the shore, Cook and his men fought desperately. When they had nearly reached the boat which was to take them back to their ship, Cook fell into the water, severely wounded; he was captured by the natives and mercilessly dragged ashore.

Some days later, while awaiting news of Cook, the sailors were presented with the bones of their dead Captain. Sorrowfully they buried his remains in that ocean on which he had sailed and from which he had gathered so much information of great value to later explorers.

The Dark Continent

At this time most of the great continent of Africa lay unexplored. The northern coast, near the Mediterranean, had been known to traders and travelers for hundreds of years, and the land of Egypt had been the center of one of the oldest civilizations of the world. But though men used the river Nile for shipping and planted their wheat and cotton on its banks, they did not know the source of this great river.

Some still believed, as had the people of ancient times, that it came from huge lakes far to the south, in a land of great white-capped mountains called the "Mountains of the Moon." But as yet no explorer had traveled up the river to find out.

Roads in Africa were short and few, and dangers lurked in the jungle and desert. Illness, hostile tribes, and wild animals seemed ever ready to hinder white men trying to push inland.

But, in 1788, the African Association was formed in England for the purpose of sending men to explore the great continent.

One of the first to go was Mungo Park, a young doctor who had never before traveled to Africa. He intended to explore the giant river Niger and to visit the cities built on its banks.

Landing on the west coast of Africa, he spent some time preparing for the trip which was to take him to places no white man had ever visited before.

During the first part of his journey into the interior of Africa, Park traveled on horseback. His two trusted negro servants, Johnson and Demba, followed on asses with his supply of food, a few guns, and amber and gold for trading with natives along their route. For a time they rode with a band of native slave traders who were out searching for captives to bring back to the coast.

They passed through village after village. Many of the Africans were friendly and gave them food and water and a place to rest. Others were frightened by the appearance of Park, a man with white skin and clad in

Mungo Park pushed on through jungles never seen by white men's eyes.

strange European clothes. Sometimes Park was stopped and ordered to the court of the Negro kings to present the rulers with small gifts of amber or other tokens of friendship; at one place his clothes caused so much merriment among the natives that they stripped his coat of the brass buttons, finally making off with the coat itself and some of Park's most valued equipment.

Often Park was warned not to travel farther inland because of savage tribes living there. Ignoring these warnings, he was captured and held prisoner by the mighty chief Ali, who wanted his queen, Fatima, to see the strange young man with the white skin.

Fortunately for him, Queen Fatima looked upon him with favor. Later when she heard that he was to be tortured and possibly killed, she stealthily aided him in making an escape and even managed to return some of his possessions.

With his horse gone, and no guides to direct him, Park nevertheless trekked on. He was determined to reach his goal. Sandstorms increased his thirst, mosquitoes plagued him, hunger and other perils threatened, but

when at last he saw the broad majestic Niger, he felt repaid for all the discomforts of exploration.

He drew closer and watched the river sparkling in the sun, as it flowed toward the east. With a feeling of accomplishment and satisfaction, he rested on its banks.

Some years later, on another trip to this part of Africa, Park and his men built boats and sailed down the Niger past cities with colorful names like Timbuctu, Gomba, and Bussa. They visited strange places and people. Then for a long time nothing was heard from Mungo Park and his followers.

Finally men came out to the coast with tales that Park had drowned in the turbulent waters of the big river; others said that he had been killed during an attack by the natives. What his end really was we can only guess.

But interest in Africa did not die with Mungo Park. Other explorers carried on.

Some crossed the Sahara Desert and reached the great Lake Chad, which lies surrounded by huge swamp-lands in the very heart of the continent.

Others followed the Nile and discovered that one of its branches, the Blue Nile, comes from the mountainous country of Abyssinia; it dashes over cliffs and rocks till it reaches the lowlands and joins the giant White Nile coming up from the south.

Other men sailed through the Red Sea and the Indian Ocean to Zanzibar, on the eastern coast of Africa. After visiting the Sultan of Zanzibar they marched inland across plains and highlands. They saw the snow-capped Killimanjaro, the highest mountain in Africa, and reached the blue waters of Lake Victoria, Lake Albert, and Lake Tanganyika.

Of all the explorers attempting to penetrate Africa, David Livingstone, a Scot, was the greatest. He had worked in the cotton mills as a boy, but never gave up his desire to become a missionary and doctor, and to travel to faraway lands.

In 1840 he was sent to South Africa as a missionary. He soon began to learn the language of the natives and to understand some of their weird customs. His interest in exploration grew, and within a few years he was pushing deeper and deeper into Africa on exploratory trips which proved to be of the greatest importance in opening up the interior of the mysterious continent.

Livingstone saw the waterfalls called by the natives "Smoke Sounding."

The chief of the Makololo tribe became his great friend, and many of the tribesmen followed Livingstone on his travels. They helped carry his supplies and courageously protected him against wild animals and hostile warriors.

Sometimes they went on foot through regions where huge herds of zebras, giraffes, and antelopes grazed, and often they arrived at native towns where Livingstone made friends with the chiefs and sat at their campfire watching the weird ceremonies of the tribe. To the sound of great tom-toms booming through the forests, the warriors, adorned in feathers and other barbaric ornaments, performed wild dances, amazing for a white man to watch.

On other occasions, Livingstone and his men boarded long canoes and sailed down the swift-flowing rivers which cut broad paths through the jungle. They watched the alligators sun themselves on the sand bars, and saw herds of huge elephants stomping slowly into the stream, rolling and basking in the water to clean off the thick, red dust of Africa.

The meeting of Stanley and Livingstone ended a famous search.

During one of these trips, which took him along the broad Zambezi, Livingstone came to the tremendous waterfalls *Smoke Sounding*, so called by the natives because of the density of the vapor rising above them.

This was the first time these great falls had been seen by a white man, and Livingstone, in honor of his queen, called them "Victoria Falls."

In 1871 Livingstone was resting near the settlement of Ujiji, on the shores of Lake Tanganyika. He was just recovering from an attack of fever, during which he had had to be carried by his faithful native helpers.

For some time he had been out of touch with the outside world. It was, therefore, with considerable astonishment that he heard through a messenger that a white man was approaching the camp.

The newcomer was Henry M. Stanley, an American newspaperman. His mission was to find Livingstone and bring back information about the famous explorer, who was believed to have perished.

Not only did Stanley seek news of Livingstone, but he brought with him many needed supplies. These, since Livingstone would not return to civilization, the two men used as they set out together to try to find the true source of the Nile.

But after a trip to the northern end of Lake Tanganyika, Stanley left to report to the world that the great explorer had been found.

In spite of failing health, Livingstone pushed on; the source of the Nile was still a riddle which he wished to solve. But he was able to get only as far as Lake Bangweul, where he died in April 1873.

When he heard that Livingstone had died without fully exploring the tantalizing geography of Africa, Stanley determined to return there himself. During the years that followed he traveled the length of the Congo River, succeeded in finding the sources of the Nile, and explored the great African lakes. It was he who discovered the romantic Ruwenzori, or Mountains of the Moon, and first learned the ways of the Pygmies, the little men of the Congo forests.

Stanley told the dramatic story of his adventures in a number of books. *How I Found Livingstone* and *In Darkest Africa* are perhaps the most famous.

The Frozen North

THE EARLY explorations of the Arctic regions, or lands of the far North, were not undertaken for the purpose of discovering new countries, but in the hope of finding a northern route to China and the Spice Islands.

The first to seek a Northeast Passage were the English, who, as early as 1553, began to send their ships up along the coast of Norway. Rounding the North Cape, the most northerly point of the Scandinavian Peninsula, some of these ships were pounded to pieces by Arctic gales; one did reach the Kola Peninsula, and the sailors guided their craft into the White Sea and landed on the shores of Russia. They were well received by the friendly fishermen on the coast, and some traveled inland and were entertained by the Russian ruler in Moscow.

Not until the spring of 1878 was the Northeast Passage successfully explored. Then Nordenskiold left Sweden with a well-equipped expedition on board the *Vega*.

All went well. They rounded the North Cape into the Arctic Ocean, and followed the Siberian coast to Cape Chelyuskin, the northernmost point in Asia. They had great hopes of reaching the Pacific before winter froze their ship in.

The natives from the shores of these northern wastes were happy to see a ship from foreign lands. They rowed out in their large skin boats, circled the ship slowly, and climbed up its sides, shouting lustily to the men from Sweden, who were unable to understand the language of these northern people.

Small gifts of tobacco and Dutch clay pipes increased the good will of the natives, and Nordenskiold and his men were in turn given samples of native utensils, and presented with huge ivory tusks taken from the remains of elephant-like mammoths.

Thousands of years ago, these enormous animals had roamed the northern regions, only to die out and disappear from the earth. But in northern Siberia, embedded in the clay banks along the rivers or in huge frozen swamps, the dead mammoths are to this day found complete and whole, even to skin and hair. The freezing temperature of the land has preserved them through thousands of years.

Bearing these gifts, the *Vega* sailed on. But in September the temperature dropped. Progress among the heavy ice floes became more and more difficult; at last ice covered the open water, and now the ship with its crew was indeed frozen in.

But all was snug on board the *Vega*. The explorers kept warm and comfortable during the long, dark winter. They lived well on supplies of flour, potatoes, meat, cranberry juice, and other good things. At Christmas they feasted on two plump pigs saved especially for this joyous celebration.

They came to know the natives in this part of the world, who lived by hunting and fishing.

Some had large herds of reindeer, which they drove from place to place in search of good grazing. They were dependent upon their herds for milk and meat, and also for hides, of which they made clothing and tents.

At last a pale sun again began to warm the air of the frozen North, and,

happy that the thawing ice floes had released their ship, Nordenskiold and his men sailed south through the Bering Strait into the Pacific Ocean.

This was the first trip through the Northeast Passage; through it much was learned about the people and animals of the Far North. But the extreme climate and the danger of being frozen in made the route impractical for regular use.

The huge island of Greenland, lying to the north between Iceland and North America, now began to interest explorers. Men wanted to know more about this cold and mountainous land, where only the coast was found habitable by the few Eskimos scattered there.

Though no one had ever traveled inland, it was clear to all who had come to the coast that the interior was filled with a hard mass of ice and snow which formed a plateau, or flat highland.

The icecap was smooth and even in places, and here traveling on skis and with sleds might be possible. But often the ice was criss-crossed by deep openings, or crevasses, into which men with their sleds and equipment might fall and disappear.

In 1888, Nansen, a young Norwegian, prepared an expedition from the east coast of Greenland. He wanted to be the first to cross the island from coast to coast.

Besides Nansen, five other men took part in the journey. All were young and strong, good at skiing, and used to traveling under difficult conditions. They pulled their own sleds, which were loaded with food, extra clothing, notebooks and cooking utensils.

Days went by before they reached the top of the steep slopes from the coast to the icecap; it was only with the greatest of effort that they managed to haul their sleds and equipment after them.

Finally they reached the highland. Before them, as far as the eye could see, stretched seemingly endless ice fields, vast and still, with no sign of life. Only an occasional white polar hare broke the solitude.

Sometimes, as the men moved westward, the weather was fine, with bright, clear sunshine. They wore sunglasses to protect their eyes from the brilliance of the sun as it shone upon the ice and the snow.

Often, however, the weather was bad; snow lashed at them in stinging gusts, and the ice-cold winds roared down at the lonely travelers as they hurriedly raised their tents.

Safe in camp, the men would wait, sleeping and preparing meals on their small stove, while the storm blew itself out. Hot soup, hearty stews, chocolate, and tea were welcome now. Pemmican, made from meats, fats, and other nourishing foods pressed together into hard cakes, was a most important part of their diet.

When the weather had cleared, the expedition would again get under way. To increase their speed, the men attached small masts and sails to their sleds; helped by a tail wind, they sped over the limitless snow fields, where not a sound was heard except the whisper of the drifting snow and the creaking of sleds and snowshoes.

After many days' travel over the icecap, the expedition at last saw the land sloping toward the coast.

Now on skis the men guided the sleds down the snow-covered hills. At last, after almost six weeks without sight of a human habitation, they reached the coast and were received by the friendly Greenlanders.

This was the first crossing of Greenland from coast to coast.

Some years later, Nansen again traveled to the frozen North. This time he came on his good ship *Fram,* which means "Forward!" His plan was to

Nansen's party pushed on over Greenland's forbidding icecap.

reach the North Pole by sailing into the drifting ice of the Arctic Ocean and letting the ocean current carry the ship across the Pole.

For several years the ship drifted slowly north with the ice in which it was bound, but it did not come near the Pole, as Nansen had expected it would.

The great problem of reaching the North Pole remained to be solved by an American, Robert E. Peary.

Peary's expedition to the North Pole began in 1908. In that year the three-masted ship *Roosevelt* sailed from New York for the far North, with Captain "Bob" Bartlett, a well-known navigator and explorer, in command. Bartlett brought Peary and his men safely to Cape Sheridan in the northern part of the American continent.

With the coming of winter, the ship was imprisoned by the ice. Supplies were taken ashore, and all hands settled down to a busy period of preparation for the actual trip to the Pole, which was to take place in the spring.

Tools and equipment had to be repaired. Warm garments were made from furs. Husky Eskimo dogs were trained to pull the heavily loaded sleds, and trips were taken in all directions to explore the land and to hunt polar bears, caribou, and musk-ox.

When the giant bear was sighted, the dogs were let loose to chase and hinder the flight of the huge, powerful animal. The hunters were then able to get close enough to shoot the bear, which was dragged to camp. There men and dogs enjoyed a meal of fresh meat.

Sometimes hunting parties, out with sleds and dogs, would meet the musk-oxen traveling over the endless snow fields in herds of five and six. When attacked, these huge animals would form a circular group, their tails toward the center of the ring, their heads, with great curved horns, magnificently facing dogs and hunters.

On these trips, too, the men were able to observe the ways of the beautiful white reindeer.

At last, on Washington's Birthday in 1909, all was ready for the trip northward. Peary, with many men, and sleds carrying supplies and equipment, started off on the long journey to the North Pole.

Though excellent plans had been made, the trip was dangerous; and though dogs and men were capable of long hours of steady travel across the ice fields, they were often stopped by open waters. Then they had to wait till hard frost set in, making traveling possible again.

Peary planted his country's flag in the snow at the frozen Pole.

Now and then the temperature went so low that hands and feet were frostbitten and had to be treated before the men could go on.

The last lap of the trip was made by Peary with five men, a few sleds, and thirty-eight dogs. The group included a six-foot negro and four Eskimos.

On the sixth of April, 1909, at ten o'clock in the morning, they reached their goal.

Peary was the first of all men to reach the North Pole; and to honor his country he planted the American flag in the snow.

In the years that followed, other men uncovered more of the secrets of the frozen North.

Vilhjalmur Stefansson, an American explorer and scientist, went to the western part of the American Arctic. He returned to tell that the northern regions were not really so cold and forbidding as many who had never been there had thought.

In his book *The Friendly Arctic*, Stefansson wrote that men could live quite safely in the far North, a region which he found to be habitable, since it had an abundance of polar bears, seals, and foxes. He felt that reindeer and musk-oxen could be developed as a food supply.

South to the Pole:

Little America Calling

WHEREAS the regions near the North Pole are covered by a mighty frozen ocean, a huge land called the Antarctic Continent spreads its mountains and ice fields over the South Pole.

It was not until whaling steamers of recent time made their voyages to this part of the world, and expeditions were better equipped to travel in bitter cold climates, that men were able to learn much about these antarctic lands.

In 1910, the Norwegian explorer, Roald Amundsen, sailed to Antarctica. Accompanied by a few men he left his ship and crossed the frozen country by dogsled. On December 14, 1911, he planted the flag of Norway on the South Pole.

This brave man, among whose achievements was the discovery of the exact position of the magnetic North Pole, lost his life in an attempt to save that of a fellow explorer. In June 1928 he set out in an airplane to try to

find the wrecked airship of General Nobile, who had flown over the North Pole. For days, and then for weeks and months, men waited, but no more was ever heard of the gallant Norwegian.

Amundsen was followed to the South Pole by Robert Scott. Scott, an Englishman who had risen by virtue of previous explorations to the rank of captain in the Royal Navy, was chosen in 1910 to lead an expedition to the Antarctic. On January 18, 1912, Scott and his men reached the Pole, only to find that Amundsen had been there before them.

This disappointment was an omen of more troubles to come. Beset by illness, lack of food, and bitter weather, the expedition and its dogsleds crawled ever more slowly northward. After a month of hardships, one man of the five broke under the strain and died.

Hoping to leave his comrades enough food to reach home, another, becoming ill, walked out to a voluntary death in a stinging antarctic blizzard.

But his sacrifice was in vain. The last entry in Scott's diary was made late in March, 1912, and his frozen body, with those of his two remaining companions, was found in November of the same year.

The lives of Amundsen and Scott remind us of the perils men willingly face to discover new lands, and to keep exploring.

Other expeditions followed to explore this part of the world. Modes of travel were improved.

Now airplanes carried explorers long distances across the land in a few hours—distances which before would have taken days and days to cover; tractors pulled much heavier loads than dogs could have hauled, and radio sets kept communications open between the men in the snow fields and the men back in camp.

With these improved means of exploration, men like Wilkins, Ellsworth, and Admiral Byrd discovered new land and new mountain ranges.

Several voyages were made by Byrd to the Bay of Whales in ships like *The City of New York*, which was large enough to carry men, dogs, airplanes, timber, and supplies.

The men built their camp on the shore of the land, where, as if to hinder man's progress to the south, the great ice barrier raises its steep clifflike walls toward the sky.

Byrd's camp was called "Little America." It was well equipped in every way. Several buildings were erected to house the men. There were store-

rooms for food, clothing, coal, and gasoline, and for such medical supplies as had been brought to camp.

The men carried on an astonishing number of activities. In the machine shop they inspected motors and made necessary repairs; in the gymnasium those who had leisure exercised to keep fit; in the laboratory scientists set up their experiments; and in the radio station, constant communications came in from the outside world.

Here, in the radio room, stirring moments gripped the men, when, on occasion, they were allowed to talk to their families in North America and to say the unbelievable words, "This is Little America calling!"

Near the buildings, deep ditches were dug in the snow, where airplanes were safely sheltered from the wind and the drifting snow. Shelters for the Eskimo dogs were also built.

When the great storms came and men and dogs had to stay indoors, life was snug and warm in Little America. Stoves heated the houses; moving pictures, games, and books afforded welcome relaxation. Victrola and radio music entertained the men; and often lectures were given by those who had been on previous adventures.

The food was nourishing and good. Whales and seal were caught for meat. Now and then penguins, which marched along on the ice near the camp, were bagged and used for food. Flour, sugar, canned fruits, vegetables, coffee, tea, chocolate, cigarettes—these things made life far different from that of earlier explorers.

When the weather was good, long trips were made with the dogs and the sleds and the tractors to distant places on the lonely continent, and new land was charted.

Once in a while flights were made in the airplanes, and on these occasions pictures were taken of the mountain ranges and other parts of the land. Maps were made to guide future travel and exploration.

One day in 1929, Byrd flew south from Little America with three of his men. They had set the South Pole as their goal.

The weather was perfect as the big plane flew high above the snowy wastes. The radio operator on board was in constant communication with Little America, so that the men back in camp might know how Byrd and his three assistants were progressing.

Having crossed long snow-covered stretches and tall mountain ranges,

they circled the Pole and headed back to camp. And about nineteen hours after the start, the roar of the airplane motors announced to Little America that Byrd and his men were safely back from the Pole.

In 1934, on another expedition to the Antarctic Continent, Admiral Byrd lived alone for four and a half months in a small wooden shack many miles south of Little America. Byrd stayed there during the long, lonely days, observing the weather and winds.

Though alone, he was always busily engaged in improving his living quarters, writing his reports, reading books, cooking his meals, and keeping up the radio connection with Little America.

He has told the fascinating story of his experiences in this small shelter in a book called *Alone*.

Byrd's ship carried materials for a city in the snow.

New Worlds to Explore

JUST AS SOME MEN have wondered about new lands far away, and crossed oceans and mountains and deserts to see these places, so others have been puzzled by the great depths of the seas.

Some dived and swam under the surface, but they were able to stay down only a few minutes, during which time they would gather sponges and pearl oysters, and also catch a glimpse of the deep and mysterious world where lack of air made it impossible for human beings to live for long.

The story goes that in 1538, at the time Charles V was king of Spain, two Greek divers descended into the water of a river near Toledo, using an inverted kettle as a diving bell.

Thousands of people lined the banks to watch the event. They gasped in astonishment. "Those Greeks will surely drown," they shouted. "Who ever heard of men staying under the river's surface?" Later, when the bell was raised, not only were the two divers safe, but a lighted candle which they had taken along on their adventuresome trip was still burning brightly.

Many years later diving helmets of metal were made; these fitted snugly to the diver's shoulders.

Diving suits of rubber and steel made it possible for men to walk safely over the ocean bottom and examine wrecks of ships. The diver's suit was connected with the surface by a long rubber hose, through which fresh air was constantly pumped.

The great pressure of the water, which is felt as divers go farther and

farther down, makes such diving impossible except near shores and harbors, where water is shallow.

In 1930 a new way was found to explore life under the sea. Two Americans, Beebe and Barton, had a giant hollow ball made from strong steel. It was provided with thick glass windows, and a door which could be closed tightly after the two men had seated themselves within the ball.

The ball, or Bathysphere, as it was called, was so strong that it could be lowered by a cable hundreds of feet into the ocean without being crushed by the water's pressure. In this way the men could go down in the ocean to depths much greater than those reached by anyone before.

When they were ready to dive with the Bathysphere, Beebe and Barton and their assistants anchored a ship in deep water near the Bermuda Islands. The two men entered their curious invention, the heavy steel door was closed with bolts, and the Bathysphere was swung over the side of the ship and lowered slowly into the ocean.

Through a telephone at their side, the men were in constant communication with their ship on the surface, and could hear at what depth they were at any time. Assistants on board the boat in turn listened with awe to the voices of the two men in the Bathysphere as they told of what they observed.

Slowly the Bathysphere sank down, and slowly the light became dimmer and dimmer. The water became a strange dark blue in color. A searchlight attached to the Bathysphere sent out its yellow beam, and anything which came within range took on an astonishingly brilliant color.

Graceful jellyfish drifted by, a school of tiny fish with beautiful coloring dashed near the searchlight, big silvery eels passed the window, shrimps drifted along, pale and transparent.

At last the men gave the signal by telephone that they were ready to return. Slowly they were drawn upward by the machinery on the boat above. Finally the Bathysphere swung in mid-air, and rested once more on the deck.

The world under the sea, which Beebe and Barton had observed through the windows of their Bathysphere, was just as exciting to them as the sights which met the discoverers of new continents.

Now to exploration by sea and by land had been added the exploration of the ocean depths. And new explorations were still to be made. For just as men had gone down into the depths of the ocean, so they would attempt to scale new heights on land.

Auguste Piccard made the first successful ascent into the stratosphere.

If we should travel in Asia and cross the great plains of India, we would one day be amazed to see a huge mountain range towering in the far distance, as if a wall had been built to bound the level land and bar our way.

These are the Himalaya Mountains—gigantic, rugged, snow-capped peaks—the highest range in the world. The silvery top of Mount Everest glitters in the sun as a challenge to men, who to this day have never been able to conquer its wind-swept summit which rises to a height of 29,141 feet.

But men do not give up. They will climb till their muscles ache and lungs hurt from the effort in the thin and frosty air; and one day they will stand on the summit of Mount Everest and look out across the lands of India, Kashmir, Nepal, and Tibet.

Long ago, men who went up in balloons rose to greater heights than those of the Himalaya Mountains to explore the upper reaches of the air which surrounds our earth. They found that, several miles above the ground, the thinness of the air made breathing difficult.

Since then the use of oxygen apparatus has been tried, but it soon became clear that if men wished to enter the very thin air, or stratosphere, they would have to find a new way.

Such a way was found by Auguste Piccard, a professor from Belgium, who made the first successful trip to the stratosphere in a huge balloon. The flight was made early one morning in the spring of 1931.

Under the balloon, which was filled with a very light gas called hydrogen, swung a giant airtight ball, or gondola, in which Piccard and a friend were lifted to the great height of nearly ten miles.

During the flight, as they rose to new heights, they observed the countryside over which they passed, took photographs, and checked their many instruments, so that the temperature of the air outside and the height reached could be accurately reported upon.

As the men rode above the clouds, the sun shone brightly on the gondola, heating the little cabin. Though the temperature outside was considerably below freezing, the cabin became so hot that they had to remove some of their clothes.

In the afternoon the balloon drifted slowly above the snow-clad mountains of the Alps. Here, after having traveled across Europe for seventeen hours, it landed safely near a little mountain town.

It was found that there were no clouds or storms at the heights which they

had reached, and Piccard declared that in the future airplanes with airtight cabins would fly through the stratosphere at great speed, avoiding the frequent bad weather of lower altitudes. Today some planes are already flying in the sub-stratosphere.

It would seem to many of us that the time of exploration has come to an end. But this is far from true.

Other explorers have for thousands of years been pushing farther and farther into the limitless reaches of the heavens, first with the naked eye, and later with telescopes of ever-increasing power. Their work is not finished. Still others delve into the fascinating, almost invisibly tiny world of plant and animal life seen through microscopes, a field in which exploration goes on and on. Meanwhile the geologists explore the earth beneath us, and learn about the now-vanished continents and oceans of ages long past.

Today, in addition, entirely new fields of exploration are opening up. Men are exploring human beings. Perhaps with us will lie the discovery of new ways to keep men well and happy, new ways to fight disease, and most important of all, better ways of living together as a community of nations.

The age of exploration is not over.

All about us there are still new worlds we can explore.

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